National Institute of Environmental Health Sciences

Measuring the health impact of temperatures in dwellings: Investigating excess winter morbidity and cold homes in the London Borough of Newham

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Abstract:

Fossil fuel energy use in heating and cooling buildings is considered to be a major contributor to observed climate change effects, so there is an environmental imperative to reduce energy use in buildings. We should also improve buildings' energy efficiency on health grounds. Climate change is predicted to produce more frequent extreme weather events, while epidemiological evidence indicates relationships between ambient temperature and ill health. This points to the need for addressing both climate change itself and the way buildings mediate outdoor conditions, for the sake of vulnerable occupants. The UK government requires evidence in support of policy-making concerning energy use in buildings and consequences for health. This paper reviews epidemiological research to illustrate problems associated with measuring the direct health impact of indoor temperatures, for which evidence remains limited. Conventionally, temperature-related health effects are discussed in terms of seasonal excess deaths. The paper goes on to describe a population-based study in London that considers morbidity rather than mortality. A new methodology is developed that links the risk of cold homes with excess winter hospital episodes, demonstrating its potential for identifying small areas for priority action on improving domestic energy efficiency in terms of health as well as the environment.

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Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Policymaker

Exposure : ☑

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Cold

Geographic Feature: ☑

resource focuses on specific type of geography

Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : England

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Injury

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly, Low Socioeconomic Status

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content